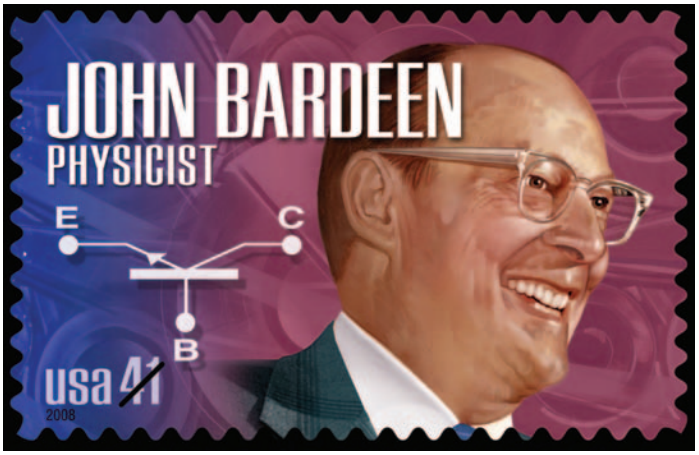
PHYSICS ILLINOIS NEWS

THE DEPARTMENT OF PHYSICS AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN • 2008



Bardeen Stamp Unveiled

On March 6, 2008, the Department of Physics hosted the Urbana Postmaster, Kathleen J. Burr, regional U.S. Postal Service officials, University administrators, and family and friends of former faculty member John Bardeen at a special unveiling ceremony for the 2008 U.S. postage stamp commemorating his achievements. One of four American scientists being honored this year, Bardeen was recognized for his co-invention of the transistor and his contribution to the first fundamental explanation of superconductivity. (The other scientists being recognized are biochemist Gerty Cori, chemist Linus Pauling, and astronomer Edwin Hubble.)

"We are absolutely delighted to see John Bardeen remembered in this way," said Department Head Dale J. Van Harlingen. "It is particularly timely that he is being honored this year; May 23, 2008, will mark the centennial of his birth. We are very pleased that the Urbana postmaster chose to have the ceremony here in Loomis, where Professor Bardeen studied and taught for 30 years."

The Champaign-Urbana Stamp Club has created a first-day cover, incorporating a cachet featuring drawings of Bardeen and of Loomis Laboratory and bearing the stamp and a special first-day Urbana cancel. If you would like to obtain one of the first-day covers, write to Celia Elliott at cmelliot@uiuc.edu. ■

Illinois launches Institute for Condensed Matter Theory

A new feature on the landscape of the Illinois Physics Department is the Institute for Condensed Matter Theory, which was launched during the October 2007 BCS@50 Conference. This institute—ICMT—aims to foster a highly interactive, cutting-edge research environment that encourages members to take on the most challenging, long-term research questions in condensed matter theory and related areas. ICMT is led by Director Paul Goldbart and Chief Scientist Tony Leggett, who are assisted by staff members Becky McDuffee and Sue Lynn Herdle.

Currently, ICMT brings together some 30 Illinois faculty as members—drawn not only from Physics but also from departments across the campus, including Mathematics, Chemistry and several departments in the College of Engineering—whose research is in condensed matter theory and related areas. The membership of ICMT also includes visitors to Illinois, along with postdoctoral and graduate researchers.

ICMT's research activities will initially be promoted through four core mechanisms: postdoctoral fellowships, a visitors program, workshops and small conferences, and support for graduate researchers. The postdoctoral fellowships, which are expected to run for three years, are designed to attract outstanding young researchers and give them the freedom to work on topics of their choice with a wide range of Illinois faculty members in the highly interactive setting that ICMT provides. More than 100 applications were received for the opening-year fellowships.

The visitors program is designed to enable stimulating visits to ICMT, from days to months in duration, by senior and junior theorists and experimentalists. These visits will foster interactions with ICMT faculty, postdoctoral researchers and graduate students, and will lead to further collaborative activities. ICMT will also host workshops and small conferences in exciting areas of condensed matter physics, especially newly emerging ones, often with a short lead-time to capitalize on breaking discoveries.

continued

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Home for ICMT is a purpose-built environment in the Engineering Sciences Building on Goodwin Avenue and Springfield Avenue in Urbana, just north of the Materials Research Laboratory. Originally conceived by Goldbart, Professor Michael Stone and Director of Budget and Resource Planning Jan Kane, the site brings together faculty, staff, postdoctoral researchers, graduate students, and visitors in a setting designed to enhance communication and collaboration. It features seminar rooms and offices that open on to ample communal discussion areas that are equipped with the theorists' vital resources: chalkboards on virtually every wall and a high-caliber espresso machine. ICMT is located adjacent to the concentration of Illinois condensed matter experimentalists, thus promoting the close collaboration between these two communities that has long been the hallmark of condensed matter physics at Illinois.

ICMT activities are currently supported by funds generously made available by Illinois Provost Linda Katehi, College of Engineering Dean Ilesanmi Adesida, and Department of Physics Head Dale Van Harlingen. To learn more about ICMT's activities, visit the ICMT website (www.icmt.uiuc.edu) or contact ICMT Director Professor Paul Goldbart (217-244-ICMT). ■

Visitor Ruslan Prozorov (Iowa State University/Ames Lab) takes a look at remodeling plans with ICMT Director Paul M. Goldbart (top); Goldbart in his office, explaining his objectives for the ICMT (bottom).

Name that Illinois physicist!

This distinguished Illinois condensed matter physicist is the inventor of the quantum well laser, the device that enabled modern optical communications. He led research groups in the Physics Research Division at Bell Laboratories for 32 years, turning out a steady stream of discoveries, observations, and theories, thereby revolutionizing the field of optoelectronics. An inventor as well as a thinker, who combines a rare mastery of both theory and experiment, this student of Charlie Slichter's has received the 1999 IEEE Jack A. Morton Award, the 1999 Charles Hard Townes Award of the Optical Society of America, and the 2001/2002 Prize for Industrial Applications of Physics of the American Institute of Physics. In 2001, he received an Alumni Award for Distinguished Service from the College of Engineering at the University of Illinois.

In addition to his seminal work on quantum wells and the quantum well laser, our mystery physicist established the "alpha parameter" to explain the behavior of semiconductor lasers and initiated a new optical integrated circuit technology that enabled optical routers and multiplexing. He is the holder of 28 patents. To find out his name and learn more about his remarkable career, turn to page 4.

Illinois 2007 APS Fellows

Faculty member Russell W. Giannetta and alumni Albert T. Macrander and Edward J. O'Brien have been elected Fellows of the American Physical Society for their significant contributions to physics.

Russ Giannetta, a condensed matter experimentalist, was recognized for "significant advances in experimental techniques for measuring the superconducting penetration depth and their application for elucidating the pairing symmetry and electronic structure of unconventional superconductors." He received his PhD from Cornell University in 1980.

After a postdoc at Bell Telephone Laboratories (1980–1982), Giannetta served on the faculty of Princeton University as an assistant professor (1982–1988) and as an associate professor at the City College of New York (1989–1992). He joined the Department of Physics at the University of Illinois in 1993.

During the last five years, Giannetta has focused on precise measurements of the London penetration depth—the point at which a superconductor excludes magnetic fields from its interior—in a wide variety of recently synthesized superconducting materials. Perhaps his most significant work has been the development of a novel oscillator technique to measure with extremely high sensitivity penetration depth as a function of *both* temperature and magnetic field.

Argonne National Laboratory

Al Macrander (BS '72, MS '74, PhD '77), group leader of the Optics Fabrication and Metrology Group at the Advanced Photon Source at Argonne National Laboratory, was cited for "advancement of x-ray science, x-ray optics, and x-ray measurements on crystals and for his leadership as editor of *Review of Scientific Instruments.*"

After receiving his PhD at Illinois under the direction of Ralph O. Simmons, Macrander was a postdoctoral associate at Cornell University in materials science, working on field-ion microscopy, and then a member of the technical staff for 10 years at Bell Laboratories in Murray Hill, New Jersey. He began work at the Advanced Photon Source in 1990, studying inelastic x-ray scattering, and was promoted to group leader in 1996. Most recently, his work has been on innovative optics for the APS, including the development of multilayer Laue lenses and Kirkpatrick–Baez mirrors, both of which have demonstrated nanofocusing of hard x-rays.

Brookhaven National Laboratory

Ed O'Brien (MS '81, PhD '87) is currently the director of operations of the PHENIX experiment at the Relativistic Heavy Ion Collider at Brookhaven National Laboratory. He was recognized for "leadership in the construction, operation and continuous improvement of the PHENIX detector since the start of RHIC, notably for the successful implementation of significant annual upgrades of the detector as part of a systematic program to extend its physics research."

O'Brien earned his PhD from the University of Illinois under the direction of Thomas A. O'Halloran. He started work at Brookhaven immediately after completing his degree and has been a member of the PHENIX experiment since 1992.

Congratulations to all our Illinois Fellows!

Join us for the Physics Illinois alumni reception

Laura Greene, Rachel Wortis (MS '92, PhD '98), Meigan Aronson (MS '83, PhD '88), and Anne Slichter at the 2005 March meeting reception

In keeping with its proud tradition of having the best party at the APS March meeting, the Physics Alumni Association will once again host a reception for alumni and friends at 6:00 p.m. Tuesday, March 11, at the New Orleans Marriott, La Galerie 4–5 (2nd floor). Join Department Head Dale Van Harlingen and other faculty members to meet old friends, make new ones, and get caught up on what's going on in Urbana. Admission is free and all Illini are welcome.

Featured Alumnus:

Charles H. Henry, Inventor of the Quantum Well Laser

Charles H. Henry was born in Chicago, Illinois, on May 6, 1937. He received an MS in physics in 1959 from the University of Chicago, and a PhD in physics in 1965 from the University of Illinois, under the direction of Charles P. Slichter.

Henry's entire professional career was spent in the research area of Bell Laboratories in Murray Hill, New Jersey. He joined Bell Laboratories in 1965 as a member of technical staff. From 1971 to 1975, he was head of the Semiconductor Electronics Research Department. He retired from Lucent Technologies Bell Laboratories in l997 as a Distinguished Member of Technical Staff. He has published 133 technical papers and holds 28 patents, including a 1976 patent covering what is now called the quantum well laser.

Throughout his career, Henry worked at the forefront of semiconductor-based optical technologies and science: LEDs, semiconductor lasers, and integrated optical circuits. He was an inventor as well as an experimenter, with a particular interest in understanding the theory underlying semiconductor optical devices.

Quantum Wells and the Invention of the Quantum Well Laser

The idea of the quantum well occurred to Henry in late 1972. While thinking about optical waveguides, Henry suddenly realized that a heterostructure is a waveguide for electron waves, not just light waves, and that a heterostructure with a thin active layer would have discrete electron modes. Such a heterostructure was later named a quantum well, and the modes are the electron states of the quantum well.

Henry further realized that these discrete electron states would greatly alter the optical absorption edge of the semiconductor. Instead of the absorption being a smooth curve steeply rising with optical energy, it would consist of a series of steps.

In early 1973, he proposed to R. Dingle that he look for these steps, and they were observed and reported in 1974 (R. Dingle, W. Wiegmann, and C. H. Henry, "Quantum States of Confined Carriers in Very Thin $AlxGa_{(1-x)}As$-GaAs-$AlxGa_{(1-x)}As$ Heterostructures," *Phys. Rev. Lett.* **33,** 827 [1974]).

After Dingle's experiment showed the reality of Henry's predicted quantum effects, Henry realized that the quantum well structure would alter the density of states of the semiconductor and result in an improved semiconductor laser. He also realized that the laser wavelength could be changed merely by changing the thickness of the thin quantum well layers, whereas in a conventional laser, a change in wavelength requires a change in layer composition.

On March 7, 1975, Henry and Dingle filed a patent entitled "Quantum Effects in Heterostructure Lasers," which was issued on September 2l, 1976. The story of the origin of the quantum well laser is told by Henry in the foreword to *Quantum Well Lasers* (C.H. Henry, Foreword, "The Origin of Quantum Wells and the Quantum Well Laser," in *Quantum Well Lasers*, ed. Peter S. Zory, Jr. [San Diego, California, Academic Press, l993], of the series *Quantum Electronics—Principles and Applications).*

Quantum well lasers have superior performance characteristics compared with standard double heterostructure lasers. They require fewer electrons and holes to reach threshold. Moreover, since quantum efficiency (photons-out per electrons-in) is largely limited only by optical absorption by the electrons and holes, very high quantum efficiencies can be achieved.

Other Research Achievements

In addition to his seminal work on quantum wells and the invention of the quantum well laser, Henry made a significant contribution to understanding the noise properties

of semiconductor lasers. In a widely cited 1982 paper, he introduced M. Lax's "alpha parameter" for the first time into semiconductor laser physics and used it to explain why the linewidth of a semiconductor laser is about 50 times greater than that predicted by the theory of Schawlow and Townes (C.H. Henry, "Theory of the Linewidth of Semiconductor Lasers," *IEEE J.Quant. Electron.* **QE-18,** 259 [1982]). The alpha parameter remains a basic laser property that aids in understanding a variety of semiconductor laser behaviors.

Early in his career, Henry identified the source of red light emission in gallium phosphide LEDs. In 1968, he and coworkers reported that the red luminescence originated from an electron-hole pair bound to a nearest neighbor donor-acceptor pair composed of zinc and oxygen (C.H. Henry, P.J. Dean, and J.D. Cuthbert, "New Red Pair Luminescence From GaP," *Phys. Rev.* **166,** 754 [1968]). Subsequently, red as well as green GaP LEDs were manufactured and used as indicator lights in a variety of applications.

Beginning in the mid-1980s, Henry (with R. F. Kazarinov) initiated a new optical integrated circuit technology based on silica waveguides fabricated on silicon wafers (Reviewed in Ch. 8, "Silicon Optical Bench Waveguide Technology," by Y.P. Lee and C.H. Henry, 319, in *Optical Fiber Telecommunications IIIB,* ed. by I.P. Kaminow and T.L. Koch [San Diego, California, Academic Press, 1997]). Optical routers, invented by C. Dragone, were fabricated with this technology and used for optical multiplexing, the simultaneous transmission of optical signals at different wavelengths over a single optical fiber.

Henry returned to the physics of quantum noise in 1996. With Kazarinov, he published "Quantum Noise in Photonics" (*Rev. Mod. Phys.* **68,** 801–853 [1996]), which explained the physical nature of noise in optical communications. The basic equations governing noise phenomena were derived from first principles and applied to specific examples.

Now retired from Bell Labs, Henry lives with his wife Helene in Raleigh, North Carolina. He has three children and four grandchildren. His activities in Raleigh include walking two miles every morning, working on amateur astronomy, and trying to fulfill a lifelong desire to understand fundamental aspects of physics through self-study. Topics so far include how stars work, quantum electrodynamics, and general relativity. ■

** The name quantum well was introduced into semiconductor laser physics in the late 1970s in the papers of N. Holonyak and his students.*

Baym shares APS Lars Onsager prize

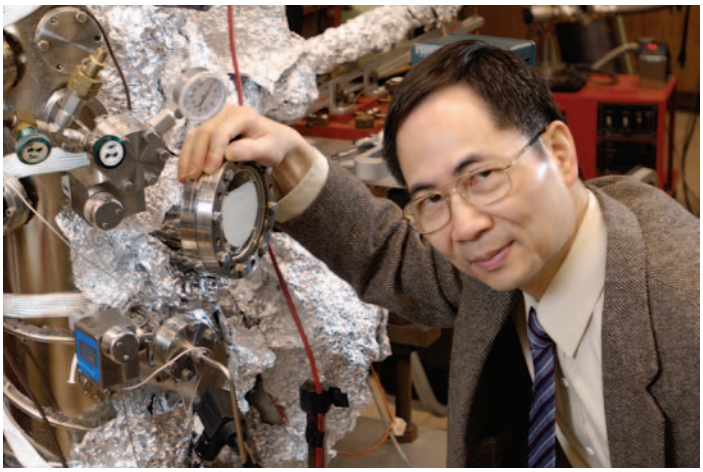
Gordon Baym has been selected to share the 2008 Lars Onsager Prize with former Physics faculty member Chris Pethick, now at NORDITA, and Tin-Lun Ho of The Ohio State University. Baym was recognized "for fundamental applications of statistical physics to quantum fluids, including Fermi liquid theory and ground-state properties of dilute quantum gases, and for bringing a conceptual unity to these areas." The prize, which recognizes outstanding research in theoretical statistical physics, will be awarded at the special prizes and awards session on Monday evening, March 10, at 5:30 p.m. in the Convention Center.

Baym will present an Onsager Prize Talk, "Stepping through 40 years of quantum fluids" at 4:18 p.m. on Tuesday, March 11, in Session L1 in the Morial Convention Center LaLousiane AB. The talk will trace the milestones in quantum fluids research—from dilute solutions of ^{3}He and ^{4}He, to superfluids in neutron stars, to cold atoms.

Since joining the Department of Physics as an assistant professor in 1963, Baym has played a major role in the study of matter under extreme conditions in astrophysics and nuclear physics. He has made original, seminal contributions to our understanding of neutron stars, relativistic effects in nuclear physics, condensed matter physics, quantum fluids, and most recently, Bose–Einstein condensates. His two textbooks, *Quantum Statistical Mechanics* (with Leo Kadanoff) and *Lectures on Quantum Mechanics,* have educated two generations of theoretical physicists.

Baym is currently the George and Ann Fisher Distinguished Professor of Engineering at Illinois. He is a member of the American Philosophical Society, the National Academy of Sciences, and the American Academy of Arts and Sciences. He received the Hans A. Bethe Prize of the American Physical Society in 2002.

T.-C. Chiang named "Outstanding Referee" by APS



Tai Chang Chiang will be honored by the American Physical Society this year in a new program to recognize the essential contributions made by anonymous peer reviewers to the APS journals.

The APS editors have selected an inaugural group of 534 "Outstanding Referees" from the 42,000 annual reviewers. In future years, the editors intend to select an additional 130 or so referees annually for this lifetime award. The 2008 Outstanding Referees will be recognized at the March meeting prizes and awards session, Monday, March 10, from 5:30 to 7:00 p.m., in Room 206 of the Convention Center.

In a letter to Chiang, Editor-in-Chief Gene D. Sprouse wrote, "Your reports and advice have helped to advance and diffuse the knowledge of physics, while creating a resource that is invaluable to authors, researchers, students, and readers. Although most scientists understand that participation as a referee is necessary for maintaining the integrity of the scientific enterprise, not all have given of their time and wisdom as generously as you have."

After receiving a BS in physics from the National Taiwan University in 1971, Chiang received his PhD in physics from the University of California, Berkeley in 1978. He joined the Department of Physics at the University of Illinois in 1980 after working as a postdoctoral fellow at the IBM T.J. Watson Research Center in Yorktown Heights, NY.

Chiang has done seminal work on bulk, surface, and interface states of metals and semiconductors using photoemission techniques. Using synchrotron-radiation photoemission spectroscopy, scanning tunneling microscopy, and molecular beam epitaxy techniques, he has examined the growth processes and the resulting physical properties of various surface and interface systems that are of fundamental scientific interest and technological relevance.

He was one of the first to demonstrate that atoms of single-crystal surfaces have binding energies different from the bulk atoms and that the energy shifts are detectable with photoemission, using synchrotron radiation as a light source. He has pioneered the application of angle-resolved and core-level photoemission to interface, quantum-well, and superlattice research and expanded it to include novel configurations and magnetic systems. He is currently carrying out x-ray scattering and diffraction experiments at the Advanced Photon Source at Argonne National Laboratory.

Most recently, Chiang and his students have fabricated miniature electron interferometers containing atomically smooth mirrors spaced by a few atomic layers. Exploiting the fact that electrons bounce back and forth between two interfaces and create standing waves, researchers in Chiang's group are able to measure the electron wavelength in their samples with very high precision. ■

Nominations sought for 2008 McMillan Award

Since 1986, the Department of Physics at the University of Illinois has presented an annual award to an outstanding young researcher in condensed matter physics in memory of our former colleague, William L. McMillan. Nominations are now being sought for the 2008 McMillan Award winner.

In the spirit of Bill McMillan's own research, the award recognizes exceptional achievements in theory, experiment, or both. A candidate must have received a PhD after May 31, 2003, to be considered for the 2008 award.

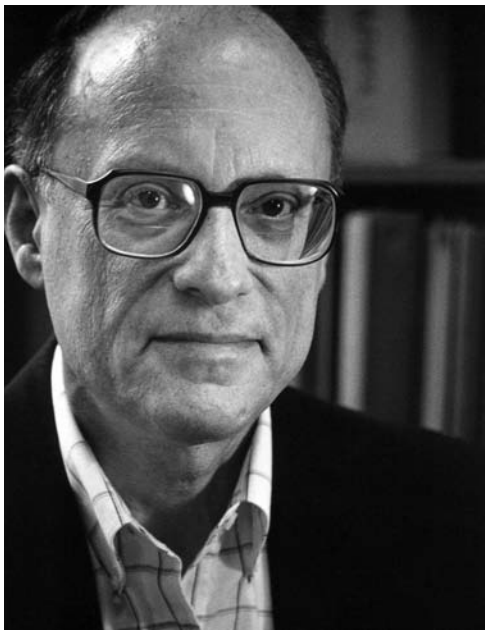
Nominations for the McMillan Award consist of the curriculum vitae of the nominee, a publication list, and the nominator's assessment of the candidate's three most important papers. For these three papers, copies of the abstract (full copies of unpublished manuscripts) should also be included. Candidates nominated in preceding years, but who are still eligible, will automatically be reconsidered by the committee. However, an update that mentions additional work and its impact will strengthen the nomination.

The deadline for receipt of nominations in Urbana is May 1, 2008, and the decision will be reached by the end of June 2008. Further information about the award, including the names of prior recipients, is maintained at www.physics.uiuc.edu/about/McMillan.

Donald M. Ginsberg

1933–2007

Donald M. Ginsberg, a world authority on superconductivity, passed away on May 7, 2007, at his residence in Urbana, Illinois. He was awarded the 1998 American Physical Society's Oliver E. Buckley Prize (the highest award in condensed matter physics) for his work on high temperature superconductivity. Among the achievements for which he was honored, Ginsberg created what were universally acknowledged at the time to be the world's finest samples of yttrium-barium-copper-oxide, and freely shared them with the scientific community worldwide. Because of the sensitivity of *d*-wave superconductivity to impurities, this advance was the key ingredient in establishing the properties of the high T_c superconductors, allowing the determination of the *d*-wave state, the fluctuations, and other novel features. For many years, Ginsberg authored the section in the *Encyclopaedia Britannica* on superconductivity; in addition, he wrote several influential review articles and book chapters, starting with his review (with L. C. Hebel) on "Nonequilibrium properties of superconductors" in the seminal two-volume set edited by R. D. Parks in 1964. During the early 1990s, Ginsberg edited the definitive five-volume book, *The Physical Properties of High Temperature Superconductors,* to which he also contributed.



Donald M. Ginsberg was born on November 19, 1933, to Maurice Jesse and Zelda Robbins Ginsberg in Chicago. He joined the department of physics at the University of Illinois immediately after finishing his graduate work with Professor Michael Tinkham at the University of California, Berkeley, in 1959. He took sabbatical leaves at Cambridge University (UK), UC Berkeley, UC San Diego, The Ohio State University, and IBM T.J. Watson Research Laboratory. In addition to being a Fellow of the American Physical Society, his awards include the Sloan Foundation Fellowship, the Daniel C. Drucker Tau Beta Pi Eminent Faculty Award (U. Illinois), University Scholar (U. Illinois), associate in the Center for Advanced Study (U. Illinois), and the Oliver E. Buckley Prize of the American Physical Society.

Ginsberg's research was in superconductivity, and he played a major role in almost every fundamental aspect of this field since the late 1950s. Building on his far-infrared graduate experience, he helped to develop planar quasiparticle tunneling spectroscopy as a vital probe of the energy gap of metallic superconductors. In the 1970s, he contributed greatly to the understanding of the effects of magnetic and non-magnetic impurities on the electronic structure of superconductors through a wide variety of measurements, including electronic transport, thermal conductivity, specific heat, and magnetic susceptibility. In the 1980s, Ginsberg extended his research to incorporate binary and ternary compounds, finally focusing on the molybdenum chalcogenides (sometimes referred to as Chevrel compounds), perhaps the most complex superconducting materials known at the time. Because of their complexity and inherent sensitivity and instability, Ginsberg realized the necessity of growing his own well-characterized and clean crystals in order to measure their fundamental properties, and thus became a world leader in preparing samples of these compounds. Ginsberg not only determined the structure and physical properties of the Chevrels, but he supplied crystals to dozens of colleagues for a broad variety of measurements.

Following the discovery of cuprate superconductors, Ginsberg was quick to redirect his lab in this direction. He tried every published recipe for creating good samples but was dissatisfied with all of them, finally developing his own approach. He claimed that the most important hint for the best recipe came from a colleague whom he met in a chance encounter at an airport. Not only did he make the most careful transport and equilibrium thermodynamic measurements, but he generously shared his best-in-the-world crystals with colleagues at numerous institutions around the world, despite the intense competition in the field. Working with the group of Dale Van Harlingen, he established the high-temperature superconductor YBCO to have *d*-wave pairing symmetry and shared the Oliver E. Buckley Prize with Van Harlingen and J. R. Kirtley and C. C. Tseui of IBM's Thomas J. Watson Research Center.

continued

APS at Illinois in 1909

In a gala two-day celebration on November 26–27, 1909, the new Laboratory of Physics at the University of Illinois was dedicated in a combined event with the American Physical Society's annual meeting. The November 26 program included the formal presentation of the building to the University by Governor of Illinois Charles S. Deneen, a charge to the department by University President Edmund J. James, and a special address, "The Administration of a Department of Physics," by President Henry S. Pritchett of the Carnegie Foundation for the Advancement of Teaching. On Friday evening, Professor Arthur G. Webster of Clark University, past-president of the American Physical Society, presented a keynote address on "Scientific Faith and Works" to the special guests—more than 40 members of the American Physical Society and the Illinois Academy of Science. A regular meeting of the APS was held on Saturday in the Physics Lecture Room, Professor Henry Crew, president of the APS, presiding.

This group photograph was taken on November 27; members of the Illinois faculty are distinguished by their lapel ribbons. They include department head Albert Pruden Carmen, a student of Helmholtz's, Floyd Watson, one of the founders of the Acoustical Society of America, and Jakob Kunz, developer of the photoelectric cell. [*Eds. note.* The missing lights on the front of the building—note the dangling wires—were installed later.]

The Laboratory of Physics was the home of the physics department until 1959, when the department moved to the "new" Physics Building (now Loomis Laboratory of Physics). The original building was renamed the Metallurgy and Mining Building in 1963 and currently houses the Department of Materials Science and Engineering at Illinois.

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At Illinois, Donald Ginsberg was widely recognized for his outstanding classroom teaching. Thirty-six PhD students did their research under his direction. Donald Ginsberg published more than 240 papers with many hundreds of coauthors at two dozen domestic and foreign institutions. He was greatly appreciated by his colleagues for his science, but equally for his wide range of interests outside of physics and his direct and often humorous way of expressing his thoughts. To celebrate his retirement, on April 19, 1997, a day-long symposium entitled "Superconductivity with a Smile" was held at Illinois and attended by more than 100 colleagues, former students, and friends, some of whom traveled hundreds or thousands of miles to be there. Many others from around the world who could not attend sent their best wishes.

In addition to his accomplishments in physics, Ginsberg enjoyed the cultural side of life, especially music, which he indulged by playing the flute, and poetry. After his retirement, he wrote several books of poetry, which featured his whimsical observations of physics, physicists, and personal life. No event was too small to be lampooned by his fiendishly dry wit and droll turn of phrase. For example, in considering his own long career at Illinois, Donald remarked simply to a colleague a few months ago, "When they ask about the old days, just tell them we had a good time." With the passing of Donald Ginsberg, the world has lost a resourceful and clever physicist and a uniquely multi-faceted personality. **We'll miss him very much.** ■

Nigel Goldenfeld (University of Illinois)
Laura Greene (University of Illinois)
Miles Klein (University of Illinois)
Thomas Lemberger (The Ohio State University)
Dale Van Harlingen (University of Illinois)